7-1986

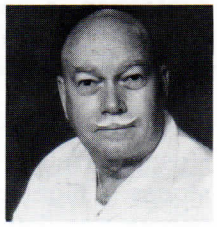
Bulletin - July, 1986

Civil Aviation Medical Association

BULLETIN
OF THE
CAMA CIVIL AVIATION MEDICAL ASSOCIATION
JULY, 1986

Headquarters
775 Bank Lane — Room 211
Lake Forest, Illinois 60045
phone (312) 234-6330

President's Message



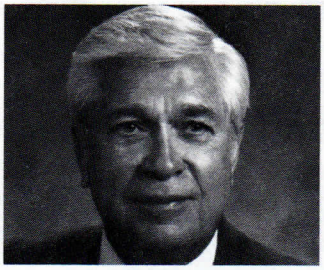
By
Dr. John H. Boyd

As Aviation Medical Examiners we deal directly with two segments of the aviation community: aviators and regulators. It is imperative that we maintain clear and open dialogue with each group. We are charged with ascertaining and certifying the physical and psychological adequacy of flyers to perform safely those acts for which they are licensed. In addition, many of us have the responsibility for the day to day health of those same people and the obligation to guide them in matters of general health and well being.

It is our obligation to be selectively supportive in carrying out those duties, and within the limits of our powers, to counsel our pilot-patients wisely. On the other hand, we carry out evaluations mandated by the Federal Aviation Administration, and exercise the authority of the Federal Air Surgeon at his direction and discretion. On the basis of our training and experience, we are also encouraged to offer counsel and comment concerning regulations, requirements, and examinations of airmen for certification. We are fortunate to have a Federal Air Surgeon who actively seeks our comments and support, and who is willing to engage in open dialogue about his function and ours.

The Federal Air Surgeon has called for comments on the recently released American Medical Association "Review of the Medical Standards for Civilian Airmen", by August 21, 1986. Although this date precedes our meeting by a month, we look forward to Dr. Alan L. Engelberg's discussion of the study, its major recommendations and the opportunity to discuss the probable impact with Dr. Frank H. Austin, Jr. I encourage you to come to Boston and participate in dialogue with the Federal Air Surgeon and with other representatives of the aviation community.

EDITORIAL



By
Robert E. Field, M.D.

The American Medical Association Review of Part 67 of the Federal Air Regulation and the Medical Certification of Civil Airmen, is a lengthy, well organized, well written document representing a massive amount of study and deliberation by highly qualified experts in many medical fields in which there are direct applications to airmen. How many and how soon these recommendations become regulatory is anybody's guess. Fifteen years wouldn't be an unreasonable projection as to time of completion.

The recommendations are an attempt to bring Part 67 up to the present "state of the art" and apply more objective criteria to the certification process. All in all, it appears the requirements are more stringent than now exist, and although the flying fraternity is accepting of improved and safer equipment, they may not be quite so enthusiastic about more informed and objective medical criteria.

There are voices in aviation who seem to feel that any restriction on an individual who wants to fly is unwarranted and unacceptable. There are also those who seem to feel that an airman should be a "superman", without any physical blemish. One voiced argument by those who would have minimal medical requirements is that there are few fatal accidents due to crew incapacitation. The truth is more likely that existing standards have been fairly effective.

One aspect of the AMA recommendations that bears special consideration is an emphasis on preventative medicine. This will be accepted by some airmen, and objected to by others. Certainly, it expands the scope of the airman-medical examiner relationship. This is good medicine, hopefully acceptable, but may possibly be beyond the intended scope of the regulation.

In any event, we look forward to the inevitable discussion soon to come. We compliment the AMA for the quality of the product, and the FAA for creating the Review. Foremost in all discussion must be safety for all those involved in aviation — flight crew, passenger, controller, ground people, and the general population. Accepting those who are "less than perfect" but who pose no hazard to flight must be preserved.

As the recommendations come under discussion, I am sure that CAMA will be registering its opinion.

Editor's foreword: *The CAMA Bulletin welcomes the following summarizing articles from Dr. Robert L. Meckelnburg, a member of CAMA. Dr. Meckelnburg, who lives in Newark, Delaware, is a specialist in Nuclear Medicine, and has extensive and impressive credentials in Nuclear Medicine, Internal Medicine, as an Editor and in executive capacities in several medical organizations. He attended meetings in England this spring which were of more than passing interest to Aviation Medical Examiners. We have done a minimal amount of editorial "butchering", and ask the reader to discern those few points which have only minimum application in a non-military setting.*

REPORT FROM ENGLAND

Robert L. Meckelnburg, M.D.

The Royal Aeronautical Society held a one day symposium on "Current Concepts in Clinical Aviation Medicine" on the 10th of April 1986 at its headquarters, #4 Hamilton Place, London. The program was chaired by Air Vice Marshall, P. Howard RAF. The first topic presented was, "Neurology in Flying with Particular Reference to Latent Epilipsy." It was delivered by Wing Commander R. Perry, Advisor in Neurology to the RAF, who made a strong point for screening all military flying applicants with EEG's using photic stimulation. It is well known that many latent epileptics have perfectly normal EEG's interictal. Photic stimulation will bring out spikes of acitivity in susceptible individuals. Since approximately one in thirty to one in forty-seven individuals that show spikes with photic stimulation will have an actual seizure, this means that the seizure possibility will range from 3.3% to 4.7% in such individuals. Mr. John Firth, FRCS-Consultant, Neurosurgery discussed head injuries and their implications for military pilots. Dr. Firth discussed the central nervous system damage from high-negative G's producing "sleeving" of the long perforating vessels that go into the cord and the cerebellum. This can result in multiple infarctions in the areas perfused by these vessels when they are physically attenuated by the extreme changes in gravity. Direct traumatic injury can be single, multiple or repeated and result in penetration or deformation of the skull. Strong blows to the head of course can produce cavitation and result in two injuries with one impact, the second being on the opposite cerebral surface from the impact site. The occurrence of post-traumatic epilepsy and post traumatic amnesia are extremely significant events in predicting the individual's ability to completely recover from the trauma. Epilepsy of any etiology of course should be disqualifying unless the etiology can be completely corrected. The largest problem of head trauma is post-traumatic epilepsy which occurs in about 5% of all head injuries. Any epileptic seizure occuring after the injury has to be considered delayed epilepsy and disqualifying. Dr. Firth suggested that prevention is the key to this problem and that head protection and crew location within the flight deck should be improved to the maximum possible. The head position at impact will predict where the helmet receives the blow and whether or not maximum protection is gained from this piece of equipment. Properly constructed helmets should be able to extend the tolerance to decceleration impact.

Flight Lieutenant P.E. Stevens from the RAF Hospital Halton discussed the implication of renal stones in flight crew. Renal stones occur in 2% of the general population. In one RAF group that was studied there were approximately twenty stone episodes per year and after 25 years all individuals who had one stone and who were not treated had a recurrence. Thiazides have been found to be very effective in reducing the recurrence of renal stones through the effect of decreasing the renal excretion of calcium and oxaluric acid. Thiazides also increase the excretion of magnesium and glycosalamines. It is generally recommended that a low dosage of the thiazides be started and then the dosage gradually increased over several months. One episode of renal colic with passage of the stone is usually not considered an impediment to flying. The individual should be taken off of flying status for approximately six months and have an adequate urological work-up performed. Subsequent thiazide therapy should be initiated and if the individual is fit at the end of six months, he should be returned to flying duty. Follow-up is then continued at six month intervals for approximately three years.

Hypertension in military flight personnel was discussed by Air Vice Marshal J.N.C. Cooke. Hypertension is defined in the RAF as a blood pressure of 145/90 or greater up to the age of 39 years. From age 40-49 the maximum reading is 155/95 and over the age of 50 the maximum allowable blood pressure reading is 160/100. There is of course great discussion as to whether a progressive elevation of blood pressure with age should be considered normal. Most individuals today treat any elevation above 140/90 as significant regardless of the patient's age. Dr. Cooke stressed that the two most important factors in blood pressure control are the elimination of smoking and weight control. Alcohol is also known to be an aggravating factor as is increased sodium intake and increased fat intake, both of which should be curtailed. For the military pilot as opposed to the civilian, medication is not approved to control hypertension.

Royal Aeronautical Society — Third Session Chair — Dr. Roger Green, British Airways

The first talk was presented by Wing Commander A. Hopkirk, advisor in chest disease to the RAF. Topic — Respiratory Medicine and Asthma.

Dr. Hopkirk discussed the impact of respiratory disease on the aeromedical disposition of pilots. A number of factors have to be considered including flight safety, the problem of sudden incapacitation, the ability to accomplish the mission, operational efficiency, the ability to carry out escape and evasion, the ability to tolerate the aerospace environment, certain cost benefit analysis and the individual's ability to handle chemical warfare.

Asthma when well controlled can allow the pilot to fly. If regular treatment or intermittent regular treatment is required, then the individual is not fit for flying solo. It is felt that most of these individuals can use inhaled corticosteroids on a periodic basis and still be on flight status.

Pneumothorax has such a high recurrence rate unless treated and is so incapacitating that it is considered to be disqualifying for flying if even one episode has transpired.

Sarcoidosis. Myocardial sarcoidosis can be quite lethal and 30% of acute sarcoidosis have myocardial involvement. This myocardial involvement can sometimes be determined by gallium and/or thallium nuclear scans, and this may be prognostically helpful. Sarcoidosis would in most instances probably be disqualifying but the extent of involvement would have to be ascertained.

Childhood asthma has to be considered in light of the individual's present condition. About 34% of childhood asthama will go on to develop adult asthma with its complications. Late onset asthma of course has a worse prognosis than early onset prognosis. Again, as mentioned above, if the problem can be adequately controlled with intermittent use of inhaled steroids, the condition may not necessarily be disqualifying.

Problems in transportation of the sick was discussed by Group Captain C. McLaren, consultant advisor in anesthetics at the RAF, Dr. P. Chapman, Chief Medical Officer, British Caledonia Airways and Dr. R.J. Fairhurst, Europe Assistants Limited. A discussion of the wide variation in the aeromedical evacuation equipment available throughout the world was undertaken. Certainly, variability is the standard since almost no two carriers were alike in all respects. Aeromedical evacuation criteria were also quite wide ranging depending upon the civilian corporation establishing the criteria for their own airlines. For instance, British Airways and British Caledonia would transport an uncomplicated myocardial infarction case two weeks after the onset of the illness. Lufthansia would require the patient to wait three months. An attempt is being made to standardize equipment and criteria of aeromedical evacuation and it is hoped that agreement can be reached throughout the industry in the near future.

Association of Aviation Medical Examiners Scientific Meeting — Chester, England, April 11, 12, 13, 1986

The meeting was opened by Dr. Roy Stewart, consultant of Civil Aviation Medicine, Ottawa, Canada with an overview of the new ICAO medical manual. The manual has been extensively updated commensurate with the voluminous increase in medical knowlege in the past decade. The manual is also being prepared in loose leaf format so that it can be rapidly updated and not require reprinting of the whole manuscript.

Dr. Jeffery Bennett, Chief Medical Officer, Civil Aviation Authority in London, discussed the inflight medical care situation. He emphasized that the most frequent in-flight casualty injury occurs from turbulence and those most often afflicted are the crew injured by galley equipment causing burns, cuts and scalds. Among passengers the most common medical complaints are due to gastrointestinal disorders. Second most common are cardiovascular events and third are respiratory problems. It is being proposed that one cabin crew member out of each flight crew be trained as a full paramedic. In New Zealand on the national airline there is a volunteer physician on every flight. There are some legal problems with the Good Samaritan law in some states and some countries, but in general this is being pretty well accepted universally. Airlines in the United Kingdom are required to carry a basic first aid kit which includes splints, bandages, burn dressings, wound dressings, tape, antiseptics, eye irrigators, airway tubes, antidiarrheal medications, analgesics, antiemetics and nasal decongestants. Four other items are considered for short haul carriers and these are, 1. a major analgesic, 2. Valium, 3. bronchial antispasmodics, 4. anti-anginal medicaments. For long haul carriers a more extensive physician's kit is supplied which includes a stethoscope, sphygmomanometer, scalpels, needles and syringes, rebreathing bag, adrenaline, hydrocortisone, analgesics, anti-histamines, valium, 50% glucose, antiemetics, lidocaine, atropine and sodium bicarbonate.

Mr. John Firth and Dr. Alastair Gale of Nottingham discussed the neurophysiological limitations of the external visual scan. The movement of the eyes or saccades are important in understanding and evaluating the neurophysiological capabilities of the eyes. When we are moving our eyes we are really not seeing. In a sense the eyes are being shut off as they are being moved and visually turned back on again as they come to a stop. This has extreme importance when we are attempting to pursue an object with our eyes that is moving across the horizon and particularly so when it is at the edge of visual accommodation. This pursuit velocity of the eyes determines whether an object can be kept in view and explains why objects being pursued visually at a great distance are often times lost because of these periods of non-visualization while the eyes are moving. It is this

saccitic suppression that allows magicians to perform their tricks relying on reflex diversion. It seems that the more you move the eyes, the less you actually see since the eyes are being turned off right before they move. Another common visual problem is where something is sighted in the periphery due to its movement and then when you attempt to focus on it you lose it. It is postulated that this is due to the two systems in the brain having to do with sight, that is the brain stem, which is sort of ambient and concerns itself with movement in the peripheral fields. It is also rather involuntary. The corticol area however is focal and the spacial resolution in this area is quite good. There is however a rather prolonged time to have this area functioning at its maximum.

Target detection then is a matter of a number of different parameters including the target itself and whether it is at the threshold of discrimination, the background which can provide clutter and masking, the pilot whose arousal time may be affected by fatigue and other factors, the visual reaction time to the target and the scanning policies that have been used by the pilot for target detection. An interesting sidelight to this subject has been the delineation of the characteristics of those individuals with so-called Yeager vision. These are individuals who are considered, 1. laconic or relaxed, 2. uninhibited, 3. practiced, 4. small pupiled and 5. no brown eyed people. This set of criteria has not been put to scientific scrutiny but is an interesting concept.

Following this a round table discussion was held on the new AMA Airman Medical qualification criteria just recently submitted to the FAA. Comparisons were drawn with the civilian and military airman qualifications at present in use in the United Kingdom.

ON TO BOSTON

A Preview of The 21st Annual Symposium The Lenox Hotel, Boston, Massachusetts September 25-28, 1986

Come To Boston

Come meet with your peers at the Lenox Hotel, site of the 21st Annual Symposium of the Civil Aviation Medical Association. Joining CAMA at this meeting will be the members of the Northeast Chapter of the Flying Physicians Association.

Make new friends, renew old acquaintances, exchange ideas with Aviation Medical Examiners from all over the world.

Attend seminars where physicians from many different countries will present their views on civil aviation medical standards.

Hear from a panel of experts chosen from the international aviation-medical community as they evaluate the recent AMA Review of Medical Standards for Civilian Airmen.

Remember that CAMA is the "professional home" of the Aviation Medical Examiner, the association to which you truly belong.

So come and join us in Boston. Enjoy the comfort, the relaxed and gracious atmosphere of the Lenox Hotel, located in the heart of Boston's Back Bay, only minutes from everything that is of interest in this historic American City.

Registration

Enclosed for your convenience are two forms, a hotel reservation card and a meeting registration card. Please return these promptly and **note the cutoff date on the hotel reservation form.**

Continued on page 5.

BOSTON

Registration *Continued from page 4.*

Send the hotel card direct to the Lenox Hotel. Your meeting registration and check should be sent direct to CAMA Headquarters.

Speakers

Following is a **partial** list of people from the aviation-medical community who will participate in the 21st annual meeting.

Dr. Frank H. Austin, Jr., Federal Air Surgeon.

Dr. Forrest M. Bird, INTENSIVE CARE TRANSPORT — Volumetric Diffusive Ventilatory Techniques for world wide military and civil application.

Dr. Alan L. Engelberg, American Medical Association.

Dr. Katherine H. Halloran, Regional Flight Surgeon, New England Region, FAA.

Dr. Richard L. Masters, Airline Pilots Association.

Dr. David P. Millet, Director of Flight Medicine, Eastern Airlines.

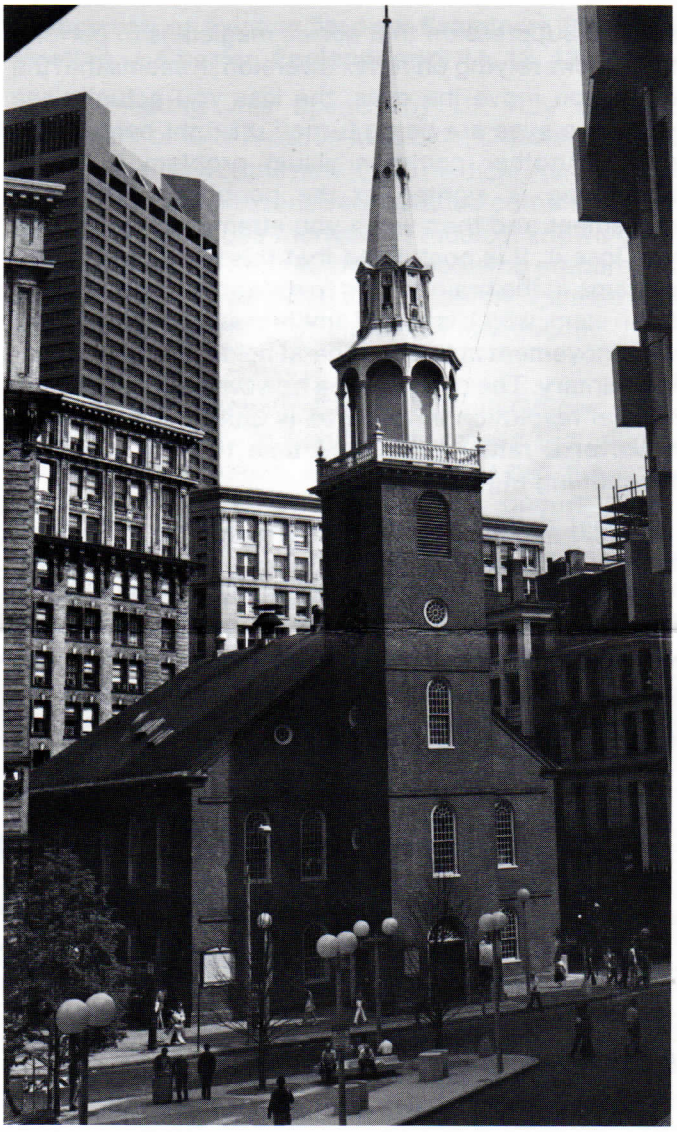
Dr. Robert S. Poole, Civil Aviation Medical Association.

Major Jack Soutendam, Canadian Airline Pilots Association.

Dr. K.D. Woolas, British Ministry of Defence and Marconi Space Organization.

Dr. J Robert Dille, Chief, Civil Aeromedical Institute, FAA. "Current Research of Interest to Aviation Medical Examiners".

Csaba Magassy, M.D., Plastic Surgeon. "Fat Lipo Suction"



Old South Meeting House, where the signal to begin the Tea Party was given.

21st Annual Symposium Schedule

THURSDAY, SEPTEMBER 25, 1986

1:30 p.m.	Registration Desk Open. Hotel Lobby.
2:30 - 5:30 p.m.	Board of Trustees Meeting. Heritage Room.
6:30 - 7:30 p.m.	Social Hour. CAMA is Host. Exeter Room.

FRIDAY, SEPTEMBER 26, 1986

8:00 a.m. - 12:00 noon.	Opening session and Scientific Meeting, Exeter Room. Evaluation of "AMA Review of Medical Standards for Civil Airmen." Chairman, Dr. Alan L. Engelberg.
12:30 - 2:15 p.m.	Annual Luncheon. Speaker, Dr. Katherine H. Halloran, FAA Flight Surgeon, New England Region. Delmonico's.
2:30 - 5:30 p.m.	Sightseeing Tour of Greater Boston. For the entire group.

SATURDAY, SEPTEMBER 27, 1986

8:00 a.m. - 12:30 p.m.	Scientific Meeting, Exeter Room.
2:00 - 5:00 p.m.	Scientific Meeting Resumes, Exeter Room.
6:00 - 7:00 p.m.	Reception and Social Hour. Dome Room.
7:00 p.m.	Annual Banquet. Speaker, Dr. Frank H. Austin, Jr., Federal Air Surgeon. Dome Room.

SUNDAY, SEPTEMBER 28, 1986

8:00 - 8:45 a.m.	Continental Breakfast for **all** Registrants. Heritage Room I & II
8:45 - 11:45 a.m.	Scientific Meeting. Exeter Room.

Arrangements for Category I CME Credit are being made.

NEWS OF MEMBERS

Past President, Dr. Roy M. Stewart, Ottawa, Canada, has been appointed to the Civil Aviation Tribunal. Roy was also consultant to the International Civil Aviation Organization in the preparation of the second edition of the Manual of Civil Aviation. The Tribunal enforces provisions of the revised Aeronautics Act by reviewing Transport Canada actions against air carriers, pilots or engineers.

Past President Dr. Silvio Finkelstein cannot attend CAMA's 21st Annual Meeting in Boston because of a conflict in dates. Silvio must attend ICAO's 26th General Assembly.

CAMA Past President Dr. Robert L. Wick, Jr., has recently been named U.S. Army Deputy Surgeon General for Mobilization and Reserve Affairs. This is a senior position for reserve medical corps officers. Bob is a former Editor of the CAMA Bulletin, served as a Tank Company Commander during the Korean War and as a member of the Advisory Team in Vietnam.

President John H. Boyd and wife, Myrtle, are the proud parents of recent graduates, their daughter, Teresa Munson, and their son-in-law, Pete Munson, who graduated from Texas College of Osteopathic Medicine in Fort Worth, Texas. The young doctors have moved to Portland, Maine, to serve a one year internship in the Osteopathic Hospital.

We wish members would send us more items about themselves for this column: awards you've received, books you have written, scientific meetings attended, books or meetings of interest to other Aviation Medical Examiners, and, finally, letters to the Editor.

Welcome Aboard

We welcome the following new members into the fellowship of CAMA.

Robert L. Peters, Jr., D.O.
405 Old West Drive
Round Rock, TX 78681

Steven Schwendeman, M.D.
1867 Airport
Fairbanks, AK 99701

Dr. S.J. Faulkner
Box 742
Duncan, B.C. V9L 3Y1, Canada

Gerd A. Asche, M.D.
Box 400
Hope, B.C. V0X 1L0, Canada

Rodney E. L. Williams, M.D.
P.O. Box 753; Long St.
St. John's, Antigua

Sorin S. Rhone, M.D.
214 - 1175 Cook St.
Victoria, B.C. V8V 4A1, Canada

Gordon Saunders, M.D.
290 England Avenue
Courtenay, B.C. V9N 6L6, Canada

Troy Ball, P.A.
AOPA
421 Aviation Way
Frederick, MD 21701

Robert H. Meaders, M.D.
4760 Falcon Drive
Mesa, AZ 85205

Dr. Robert L. Wick, Jr., received CAMA's AWARD OF MERIT, from Dr. John H. Boyd, President, at the Board of Trustees meeting in Nashville, Tennessee. The Award was made in recognition of Dr. Wick's outstanding contributions to civil aviation medicine, his services as President of CAMA, and, particularly, for his 5-year tenure as Editor of the CAMA Bulletin.